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Study Plan for Validation of the
Missouri County Agent Inventory.

1. Title: Validation of an Aptitude Test in the Selection of County Agricultural Agents.
2. Purpose and Significance: Agricultural extension work is carried on by over 6,500 county agricultural agents. The average turnover per year is about 15% or nearly 1,000 new agents.

The selection of effective county agents is basic to the conduct of extension work. They are the extension personnel who have continuous and direct contact with the people. Depending upon them, extension work succeeds or fails.

Using funds allocated to the Cooperative Extension Service by the Office of Naval Research, nine studies were conducted in four States -- Michigan, Missouri, New York, and Texas (1949-52) -- to determine the differential characteristics of the more effective and less effective county agents.

One of the Missouri studies developed an aptitude test, the Missouri County Agent Inventory, for use in selecting county agents. On the basis of the rating method used in Missouri, the Inventory did a very good job of selecting the better agents. As aptitude tests go the predictive value was exceedingly high.

The significance of the problem of selecting the most effective agents and the fact that the Missouri Inventory has such a high predictive value of selecting agents in Missouri warrant a further study to validate it on a national basis.

3. Scope: The study will be conducted in 10-15 States ranging in size of number of personnel and in various extension regions of the country.
4. Research Design:
 - a. Administration of the Inventory: The Inventory will be administered to all promising applicants as they apply for county agricultural positions (including also 4-H Club agents who may later become county agricultural agents) in the participating States. The Inventory will not be scored but will be sealed and filed away so that these results cannot influence later judgments of these individuals.
 - b. Judging Effectiveness of Agents: A system of judging the effectiveness of county agents will be devised in each State or the present system revised if necessary, as the case may be. This must be given careful thought because it is the criterion of effective agents and against which the Inventory is validated. Each State will have its own judging system based on its own conditions and standards of extension work. The ultimate use of the Inventory in an individual State will depend upon how well the Inventory will predict the effectiveness of the agents employed in that State.

At the end of the first two years of service, all county agents on the job at the time will be judged as to effectiveness. The same will be done at the end of the third, fourth and fifth years. By the end of the five-year period the Inventory will have been given and effectiveness ratings made on a sufficient number of new agents.

c. Comparison of the Results: At the end of the five years the Inventories will be scored and effectiveness ratings predicted. The actual ratings and the predicted ratings of the agents who had taken the Inventory and who had been on the job at least two years will be compared to determine how closely they correspond. The results will be set up in tabular form to show the degree to which the actual and predicted ratings are identical.

5. Supplemental Questionnaire: The Michigan and New York studies uncovered certain differential characteristics of more effective and less effective agents. These will be formulated into a Supplemental Questionnaire to be given to promising applicants at the time the Inventory is given. This aspect of the study is designed to include other factors which may increase the predictive value of the study.
6. Further Research: It is conceivable that the length of the Inventory can be substantially shortened with a minimum loss in predictive value. It is also conceivable that the Supplemental Questionnaire will yield questions having considerable contribution to the prediction of county agent effectiveness.

Therefore, further research will be conducted in the Federal Extension Service from the above data obtained by the State Extension Services to test the predictive power of each question in the Inventory and in the Supplemental Questionnaire when used on a broader base. The statistical procedure used will be similar to the one used in constructing the Inventory in Missouri.

Questions with the highest predictive power will be selected to shorten the Inventory but still maintain the predictive value of the Inventory.

7. Responsibilities: This will be a cooperative study between the participating State Extension Services and the Division of Extension Research and Training of the Federal Extension Service. Each State will conduct the study as outlined in Item 4 above. The Division serves as consultant to each State in formulating and conducting the study and in coordinating it among the States.

The Division will take leadership in developing the Supplemental Questionnaire (Item 5) and will furnish each State with sufficient copies. It will also be responsible for the validation analysis given in Item 6.

8. Organization: Each State should have a committee to advise on the study and participate in determining the system that the State will use in judging the effectiveness of county agricultural agents. It should include State personnel engaged in the supervision of county agents.

Each State should have a person assigned the responsibility for carrying out the study in the State. That person will work closely with the person in the Division of Extension Research and Training who has the responsibility for the study.

9. Use of Findings: If the Inventory proves to be valid in other States, it will help to select agents who will be more effective in carrying on extension work, increase the efficiency of extension and create greater satisfaction among the people of the county. It is also not too much to hope that better agents will help to reduce the timelag between research and practice. The Extension Service is no better than its county agents who carry on the work with the people.

It must be made clear, however, that agents would not be selected automatically from the scores on the Inventory. The Inventory results are one of the factors a State director and staff would consider in the selection of agents. Added to other selection factors the Inventory would provide a more satisfactory basis of selection.

It is important to note that most of the questions in the Inventory have nothing to do with Extension work. Hence a person cannot guess how to answer a question in order to get a higher score and "beat" the test. Research on the Inventory has shown that persons cannot force a higher score even when they try to do so.

Procedure and Specific Jobs to be Done
by a State Extension Service.

1. Appoint a study committee to guide the study and develop and use a system for judging the effectiveness of county agents.

Appoint a person as the study leader to carry on the study.

2. Obtain copies of Missouri County Agent Inventory and answer sheets from

Dr. Charles Lively
Department of Rural Sociology
University of Missouri
Columbia, Missouri

These can be had for 5-10¢ apiece. Since the Inventory can be used over and over you will need only possibly 10-15 copies. The applicants do not mark the Inventory. They place their answers on answer sheets. You will need an answer sheet for each promising applicant.

3. Give the Inventory and Supplemental Questionnaire to promising applicants for county agricultural agent positions. Care should be taken that answering the Inventory and the Supplemental Questionnaire should be the applicant's own work. Begin to give the Inventory and Supplemental Questionnaire in the fall of 1956.

4. Seal the Inventory and Questionnaire in an envelope and place name of applicant on envelope. Do not score the Inventory nor Questionnaire. No one should be aware of the applicants' answers so that they cannot influence the ratings made later. Provide a place for filing the above envelopes.
5. The committee would review the system of judging the effectiveness of county agricultural agents and work out a system that is most adaptable and practical for the State. Many States have such systems whose forms and procedures can be reviewed.
6. At the end of 2, 3, 4, and 5-years all county agents will be judged as to effectiveness by State supervisors and others who are well acquainted with each agent's work, using the above system.
7. The Missouri Inventory will then be scored in the State using the scoring key obtained from Missouri.
8. A predicted rating will be made for each agent from these scores using the Missouri formula.
9. Comparisons will be made between the predicted rating and the actual rating to determine the accuracy of the Inventory as an aptitude test in the selection of county agricultural agents. A cross-hatch table showing the number of agents in each rating will be prepared. A coefficient of correlation, a measure of the degree to which the actual rating and the predicted rating correspond, will be prepared.



